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Claims

1. (currently amended) An integral and removable packing unit, comprising:  
a housing for removably holding a sacrificial packing material configured to form a steam seal between a sootblower steam tube and lance spindle when the packing unit is installed in an operative position in association with the steam tube and the spindle and the packing material is loaded by applying compression to the packing material; and

wherein the housing holding the and packing material forming comprise an integral unit constructed so as to be installed to and removed for installation to and removal from the operative position with the packing material held intact within the housing.

2. (original) The packing unit of claim 1, further comprising a compression unit for compressing the packing material to tighten the seal between steam tube and lance spindle when the packing unit is installed in the operative position.

3. (original) The packing unit of claim 1, further comprising a detent mechanism for unloading the packing material to facilitate installing the packing unit on, and removing the packing unit from, the operative position.

4. (original) The packing unit of claim 3, wherein the compression unit comprises one or more coil springs located between first and second compression plates.

5. (original) The packing unit of claim 4, wherein:  
the packing unit defines a cylindrical opening for receiving the steam tube, and  
the packing material comprises a series of equally-sized, concentric, sacrificial packing rings having an inner dimension approximately equal to an outer dimension of the steam tube and an outer dimension approximately equal to an inner dimension of the housing.

6. (original) The packing unit of claim 5, wherein the compression unit comprises a plurality of coil springs located around the cylindrical opening.

7. (original) The packing unit of claim 6, wherein the detent mechanism comprises one or more set screws that threadably engage at least one of the compression plates to compress the coil springs and thereby unload the packing material.

8. (original) The packing unit of claim 1, further comprising a packing wear monitor.

9. (original) The packing unit of claim 8, wherein:

the compression unit comprises one or more coil springs located between first and second compression plates; and

the packing wear monitor comprises a viewing port revealing the linear travel position of the second compression plate.

10. (original) The packing unit of claim 3, wherein the packing material is captured on the steam tube and compressed by the compression unit when the packing unit is in the operative position and the detent mechanism is inactive.

11. (original) The packing unit of claim 3, wherein the packing material is captured on the steam tube and compressed between an internal bushing and a plunger coupled to the second compression plate when the packing unit is in the operative position and the detent mechanism is inactive.

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12. (currently amended) An integral and removable packing unit, comprising:  
a housing configured to be removably installed in an operative position in association with a sootblower steam tube and lance spindle with the steam tube passing through a cylindrical opening defined by the packing unit; and  
a plurality of concentric, equally-sized, sacrificial packing rings captured on the steam tube and configured to form a steam seal between the spindle and the steam tube when the packing unit is installed in an operative position and the packing material is loaded by a the compression unit; and  
wherein the housing, packing rings and compression unit comprise an integral unit constructed so as to be installed to and removed from the operative position with the packing material held intact within the housing.

13. (currently amended) The packing unit of claim 12, wherein the further comprising a compression unit is located within coupled to the housing.

14. (original) The packing unit of claim 13, further comprising a detent mechanism for unloading the packing material to facilitate installing the packing unit on, and removing the packing unit from, the operative position.

15. (original) The packing unit of claim 14, wherein the compression unit comprises one or more coil springs located between first and second compression plates.

16. (original) The packing unit of claim 15, wherein the detent mechanism comprises one or more set screws that threadably engage at least one of the compression plates to compress the coil springs and thereby unload the packing material.

17. (original) The packing unit of claim 16, further comprising a packing wear monitor including a viewing port revealing the linear travel position of the second compression plate.

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18. (currently amended) A sootblower comprising:  
a steam tube;  
a lance tube telescopically received on the steam tube and having an associated lance spindle ;

a housing for removably holding a sacrificial packing material configured to form a steam seal between the steam tube and the lance spindle when the packing unit is installed in an operative position and the packing material is loaded by applying compression to the packing material; and

wherein the housing ~~holding the~~ and packing material ~~forming~~ comprise an integral unit constructed so as to be installed to and removed for installation to and removal from the operative position with the packing material held intact within the housing.

19. (original) The sootblower of claim 18, further comprising a compression unit for compressing the packing material to tighten the seal between steam tube and lance spindle when the packing unit is installed in the operative position.

20. (original) The sootblower of claim 19, further comprising a detent mechanism for unloading the packing material to facilitate installing the packing unit on, and removing the packing unit from, the operative position.

21. (original) The sootblower of claim 20, wherein the compression unit comprises one or more coil springs located between first and second compression plates.

22. (original) The sootblower of claim 19, wherein the detent mechanism comprises one or more set screws that threadably engage at least one of the compression plates to compress the coil springs and thereby unload the packing material.

23. (currently amended) The ~~packing unit~~ sootblower of claim 18, wherein the packing material is sacrificial, further comprising a packing wear monitor.

24. (original) The sootblower of claim 23, further comprising a packing wear monitor.

25. (withdrawn) A sootblower comprising a lance tube telescopically received on a steam tube, the improvement comprising an integral packing housing containing a packing material that can be removed and reinstalled intact for the purpose of replacing the packing material.

26. (withdrawn) An industrial boiler comprising a cleaning system including a plurality of the sootblowers of claim 25.

27. (withdrawn) A power plant having an output rating maintained by a boiler cleaning system comprising a plurality of the sootblowers of claim 25.

28. (withdrawn) A method for replacing a sootblower packing, comprising the steps of:

activating a detent mechanism to unload an integral packing housing and packing material unit while the unit is installed in an operative position on the sootblower;

removing the unit intact from the sootblower;

replacing the packing material;

reinstalling the unit in the operative position on the sootblower; and

deactivating the detent mechanism to load the packing material with the compression unit.

29. (withdrawn) A method for maintaining a desired output rating for an industrial boiler by continually cleaning the boiler with sootblowers while the boiler is in operation, and periodically maintaining the sootblowers with packing replacement implemented through step comprising, for each sootblower:

- discontinuing boiler cleaning with the sootblower;
- activating a detent mechanism to unload an integral packing housing packing material unit while the unit is installed in an operative position on the sootblower;
- removing the unit intact from the sootblower;
- replacing the packing material;
- reinstalling the unit in the operative position on the sootblower
- deactivating the detent mechanism to cause the compression unit to load the packing material; and
- resuming boiler cleaning with the sootblower.